APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,820	04/04/2001	Eric J. Horvitz	MS1-4861US	2915

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EXAMINER
SALTARELLI, DOMINIC D

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
12/04/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

	Application No.	Applicant(s)
Office Action Summary	09/825,820	HORVITZ ET AL.
	Examiner	Art Unit	
	DOMINIC D. SALTARELLI	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 August 2009</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7,9-18,32,33 and 53</u> is/are pending in the application.
     4a) Of the above claim(s) <u>18,32 and 33</u> is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-7,9-17 and 53</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a)☐ All   b)☐ Some * c)☐ None of:
       1. ☐ Certified copies of the priority documents have been received.
       2. ☐ Certified copies of the priority documents have been received in Application No. _____.
       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March

4, 2009 has been entered.

Response to Arguments

2.   Applicant's arguments with respect to claims 1and 53 have been considered but

are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-7, 9-18, 32-34, and 53 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Maissel et al. (6,637,029, of record) [Maissel] in view of Herz et al.

(5,758,257, of record) [Herz], Neal et al. (6,324,534, of record) [Neal], and Heckerman

et al. (5,704,017) [Heckerman].

Regarding claims 1, 17, and 53, Maissel discloses a system for ranking items in a selectable information list received from an information delivery system (col. 13, lines 35-47), comprising:

means for logging selections of information viewed by local users of the information delivery system and temporal history related to a plurality of time subintervals that correspond to the viewing of the selected information, the selections of information logged for a plurality of days (col. 12, lines 16-45);

means for training a plurality of separate collaborative filtering models, each with information from a corresponding logged temporal history that has been viewed by the local users and disparate logged temporal history that has been viewed by a plurality of global users (filtering rules are abstracted from viewing histories and program characteristics, col. 13, lines 9-34, where the means for determining said rules is in the manner known in the art, col. 18, lines 8-25, which involves evaluation of collected information from many different users to evaluate which types of viewing patters represent which types of preferences);

means for inferring content preferences associated with a likely subset of the local users that employs the information delivery system (col. 18 line 45 - col. 19 line 15); and

means for generating the recommendation specific to the inferred, likely subset of the local users based at least in part on the inferred content preferences and information obtained from a plurality of global users (application

of said rules, col. 18, lines 8-25, to select recommended programming, col. 13, lines 8-47).

Maissel fails to disclose the means for training a plurality of separate collaborative filtering models utilizes information from a corresponding, respective time subinterval of the logged temporal history that has been viewed by the local users, the means for inferring content preferences associated with a likely subset of the local users that employs the information delivery system uses a particular one of the plurality of time subintervals and utilizes a respective one of the collaborative filtering models corresponding to a target time period to provide a recommendation, the means for generating the recommendation uses the information obtained from a plurality of global users that related to the particular one of the plurality of time subintervals, and means for automatically broadening the particular one of the plurality of time subintervals into at least one additional time subinterval when the recommendation yielded from the particular one of the plurality of time subintervals covering the target time period is inadequate.

In an analogous art, Herz teaches means for training a plurality of separate collaborative filtering models (one for each time of day, col. 5, lines 23-31, where each model is constantly updated based on viewer selections, col. 7, lines 6-35) utilizing information from a corresponding, respective time subinterval of the logged temporal history that has been viewed by local users (col. 4 line 59

- col. 5 line 22), producing a finer degree of accuracy and relevance of program recommendation (col. 4, lines 15-31).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system of Maissel to include in the means for training a plurality of separate collaborative filtering models, utilizing information from a corresponding, respective time subinterval of the logged temporal history that has been viewed by local users, as taught by Herz, for the benefit of producing a finer degree of accuracy and relevance of program recommendation. Making this combination results in the use of not simply the profile of an individual user for recommending programs, but also takes into account the time of day or week (time subinterval) at which the viewing is to take place.

Maissel and Herz fail to disclose means for automatically broadening the particular one of the plurality of time subintervals into at least one additional time subinterval when the recommendation yielded from the particular one of the plurality of time subintervals covering the target time period is inadequate.

In an analogous art, Neal teaches a searching paradigm wherein if the number of 'hits' from a particular search of a given data set is insufficient, then the search is broadened to include additional data sets until a satisfactory result is found (col. 6, lines 59-65 and col. 7, lines 15-33).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system of Maissel and Herz to include automatically broadening the particular one of the plurality of time subintervals into at least one additional

time subinterval when the recommendation yielded from the particular one of the
plurality of time subintervals covering the target time period is inadequate by
applying to the searching paradigm taught by Neal, which is used to improve the
searching of product supplier catalogs, to similarly improve the technique for
searching for recommended programs taught by Maissel and Herz.

Maissel, Herz, and Neal fail to explicitly disclose, as part of the system, a
filtering component that forms a temporally filtered reviewed items list that
includes a subset of the logged selections of information viewed by the local
users, the subset chosen to incorporate the logged selections tagged with a
particular one of the plurality of time subintervals that includes a target time
period for providing a recommendation, the temporally filtered reviewed items list
provides implicit evidence of content preferences associated with a likely subset
of the local users that employs the information delivery system during the
particular one of the plurality of time subintervals.

In an analogous art, Heckerman teaches a system for recommending
television programming (col. 18, lines 53-62) wherein when considering what to
recommend during a particular time of day, filtering is only performed considering
logged titles that correspond to pre-selected dates and times (col. 20, lines 1-8).

It would have been obvious at the time to a person of ordinary skill in the
art to modify the system of Maissel, Herz, and Neal to include when considering
what to recommend during a particular time of day, filtering is only performed
considering logged titles that correspond to pre-selected dates and times, as

taught by Heckerman, since Herz teaches it is desirable to also consider the time

of day when determining customer preferences (Herz, col. 29 lines 52-67 "...it is

possible to obtain active feedback from the customer, either simply what was

watche at each time or, more completly, how much the customers (in their

estimation) liked what they saw.").

Regarding claims 2 and 3, Maissel, Herz, Neal, and Heckelman disclose

the system of claim 1, wherein the collaborative filtering system assigns a

positive vote to logged selections that are viewed for a dwell time that exceeds a

predetermined threshold (Maissel, col. 4, lines 30-44).

Regarding claims 4 and 5, Maissel, Herz, Neal, and Heckelman disclose

the system of claim 1, wherein the collaborative filtering system assigns a

negative vote to logged selections that are viewed briefly and jumped away to

another selection (programming which is not viewed for at least a predetermined

threshold of time are not included in the new profile information, Maissel, col. 17,

lines 17-44).

Regarding claims 6 and 7, Maissel, Herz, Neal, and Heckelman disclose

the system of claim 1, wherein the viewed information is time stamped by event

type (Maissel, col. 17, lines 38-44) and the collaborative filtering system is based

on either a single collaborative filtering model or a plurality of separate

collaborative filtering models (can be a single, simple data comparison model, or

a complex rule based algorithm, Maissel, col. 13, lines 8-24) that are trained

(Herz, col. 7, lines 6-35) according to time subintervals intervals that the

information has been viewed (Herz, col. 4, lines 59-64).

Regarding claims 9 and 10, Maissel, Herz, Neal, and Heckelman disclose

the system of claim 1, wherein the collaborative filtering system provides in real-

time a selectable recommendation list ordered by estimated degree of preference

that a user has for each item (Maissel, col. 20, lines 38-44) and receives

attributes of at least one user of the system and utilizes these attributes in

providing the selectable recommendation list (Maissel, col. 20 line 60 - col. 21

line 3).

Regarding claim 11, Maissel, Herz, Neal, and Heckelman disclose the

system of claim 10, wherein the collaborative filtering system receives attributes

of other systems and utilizes these attributes in providing a globally ranked

recommendation list to a cluster of systems based on the temporal viewing

history of the systems of the cluster (Maissel, col. 18 line 58 - col. 19 line 15).

Regarding claims 12 and 13, Maissel, Herz, Neal, and Heckelman

disclose the system of claim 9, wherein the collaborative filtering system receives

a previously viewed item list that has been filtered by a filtering system (the

profile of another person's preferences, Maissel, col. 14 line 54 - col. 15 line 3)
and generates a new recommendation according to the preferences provided by
the filtered previously viewed item list, the filtering system comprising a popularity
filter (Maissel, col. 14 lines 20-24 and 38-46).

Regarding claims 14-16, Maissel, Herz, Neal, and Heckelman disclose the
system of claim 1, further comprising a user interface that allows a user to
provide a filter to a reviewed items list (Maissel, col. 12 line 46 - col. 13 line 8,
wherein user's are provided with the list of which programs to include or not
include as well as general profile information, col. 13, lines 1-7), allowing the user
to request a time period for reviewing information from the selectable
recommendation list wherein the collaborative filtering system supplies the
selections for the time period requested based on the temporal history of
selections within a similar time interval covering the time period (Herz, col. 4,
lines 59-64) and to modify the reviewed items list, and inputs the modified
reviewed items list as updated preferences into the collaborative filtering system,
such that a new recommendation list can be generated based on the updated
preferences (Herz, col. 7, lines 6-35).

Conclusion

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to DOMINIC D. SALTARELLI whose telephone number is

(571)272-7302. The examiner can normally be reached on Monday - Friday 9:00am -

6:00pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dominic D Saltarelli/
Primary Examiner, Art Unit 2421